New England Bioassay

A Division of GZA

GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION MANAGEMENT

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NEW ENGLAND BIOASSAY A DIVISION OF GZA
CHRONIC AQUATIC TOXICITY TEST REPORT

Permitee: Patriot Beverages NPDES # MA0004936
Report submitted to: 20 Harvard Road
Littleton, MA 01460
Sample ID: Outfall 001
Test Month/Year: October 2018
NEB Proj # 05.0044697.00

Test Type / Method: *Pimephales promelas* Modified Chronic Static-Renewal Freshwater Test Method 1000.0; EPA 821-R-02-013

Effluent Sample Dates: #1 9/30-10/1/18 #2 10/2-3/18 #3 10/4-5/18

Test Start Date: 10/1/18

Results Summary

Your results were as follows:

Passed all permit limits

Acute Test Results

Species	LC50	A-NOEC	Permit Limit	Pass / Fail
Pimephales promelas	>100%	100%	≥ 100%	Pass

Chronic Test Results

Species	C-NOEC	C-LOEC	IC25	Permit Limit	Pass/Fail
Pimephales promelas	100%	>100%	>100%	≥ 91%	Pass

Data Qualifiers affecting this test:

Certifications & Approvals: NH ELAP (2071), NJ DEP (CT405)

Test Report Certification

Permittee name:	Patriot Beverages	Permit number:	MA0004936
Client sample ID:	Outfall 001	Test Start Date:	10/1/18

Whole Effluent Toxicity Test Report Certification (Permittee)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on: _____ (Date)

_____ Authorized Signature

_____ Print or Type Name and Title

_____ Print or Type the Permittee's Name

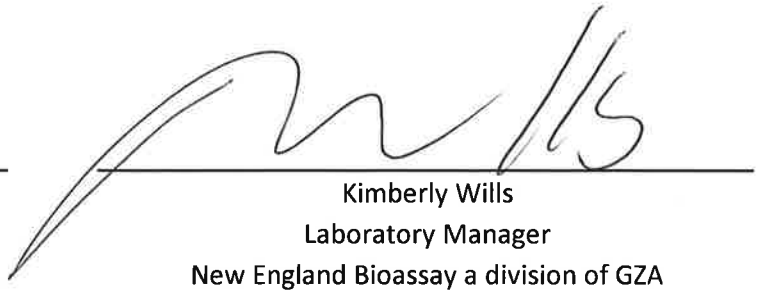
MA0004936
Print or Type the NPDES Permit Number

Whole Effluent Toxicity Test Report Certification (Bioassay Laboratory)

The results reported relate only to the samples submitted as received

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on: 11/1/18 (Date)



Kimberly Wills
Laboratory Manager
New England Bioassay a division of GZA

General Test Conditions

Permittee name: Patriot Beverages | Permit number: MA0004936

Client sample ID: Outfall 001 | Test Start Date: 10/1/18

Sample Collection Information

Effluent #1 Dates/Times: 9/30-10/1/18 @ 0800-0700 Receiving Water #1 Date/Time: 10/1/18 @ 0645

Effluent #2 Dates/Times: 10/2-3/18 @ 0700-0700 Receiving Water #2 Date/Time: 10/3/18 @ 0730

Effluent #3 Dates/Times: 10/4-5/18 @ 0700-0600 Receiving Water #3 Date/Time: 10/5/18 @ 0630

Were a minimum of three samples collected? Yes ☑ No ☐ *(see note below)

Were samples used within the first 36 hours of collection? Yes ☑ No ☐ * (see note below)

* sample collection note:

Test Conditions

Permittee's Receiving Water: Reedy Meadow Brook

- Dilution water: Laboratory synthetic soft water (hardness 45 - 55 mg/L CaCO3)
- Control water: Receiving water collected at a point immediately upstream of or away from the discharge

Effluent concentrations tested: 0%, 6.25%, 12.5%, 25%, 50%, 91%, 100%

Was effluent salinity adjusted? No ☑ Yes ☐ with Instant Ocean sea salts to _____ ppt

Dechlorination procedures: Chlorine is measured using 4500 CL-G DPD Colorimetric Method

- Dechlorination was not required

Aeration: Did Dissolved Oxygen levels fall below 40% saturation? Yes ☐ No ☑

Test Aerated at <100 bubbles/minute as of: _____

TRC results and further information about aeration of samples can be found attached in "sample receipt chemistry"

Reference Toxicant Data

Fathead minnows

Date:	10/1/18
Toxicant:	Sodium chloride
Dilution Water:	NEB Soft Water
Organism Source:	NEB
Growth IC25:	1.45 g/L

Results within range Yes ☑ No ☐

Pimephales promelas Test Results

Permittee name: Patriot Beverages Permit number: MA0004936

Client sample ID: Outfall 001 Test Dates: 10/1/18 - 10/8/18

Test Acceptability Criteria

Lab Diluent Survival:	100 %	Mean Lab Diluent Growth:	0.49 mg
Brook Control Survival:	77.5 %	Mean Brook Control Growth:	0.48 mg
Thiosulfate Control Survival:	N/A %	Mean Thiosulfate Control Growth:	N/A mg

Presence of an asterisk (*) indicates EPA criteria was not met, see explanation in the "Results Discussion" section at the bottom of the following page.

Test Results

		Permit Limit	Test Result	Pass/Fail Status
Acute Data	48 hr LC50	≥ 100%	>100%	Pass
	48 hr NOEC		100%	
	TUa			
Chronic Data	Chronic LC50		>100%	
	Survival C-NOEC		100%	
	Survival C-LOEC		>100%	
	Growth C-NOEC		100%	
	Growth C-LOEC		>100%	
	Growth IC25		>100%	
	Growth IC50		>100%	
	Reportable C-NOEC	≥ 91%	100%	Pass
	Reportable C-LOEC		>100%	
	MATC		>100%	
	TUc			

Presence of an asterisk (*) indicates qualified data, see explanation in the "Results Discussion" section at the bottom of the following page.

Test Variability

Growth PMSD: 9.2% Upper & Lower EPA bounds: 12 - 30% ☑ Low ☐ Within bounds ☐ High

☐ PMSD exceeds upper bounds. Test results are highly variable and may not be sensitive enough to determine the presence of toxicity at the permit limit concentration (PLC)

☐ The PMSD falls within the upper (30%) and lower (12%) bounds. Results are reportable.

☑ PMSD falls below the lower bound test variability criterion. The test is very sensitive. The relative percent difference (RPD) between the control and each treatment was calculated and compared to the lower bound.

- ☐ The RPD values for all concentrations fall below the lower bound. Any differences observed in this test are considered statistically insignificant.
- ☐ Some of the concentrations that were flagged as statistically significant have RPD values that fall below the lower bound. Any differences observed in these concentrations will not be considered statistically significantly decreased from the control.
- ☑ No statistically significant reductions were observed in this test.

Pimephales promelas Test Results

Permittee name: Patriot Beverages Permit number: MA0004936

Client sample ID: Outfall 001 Test Dates: 10/1/18 - 10/8/18

Concentration - Response Evaluation

Survival: #12 No significant effects at any test concentration with a flat concentration-response curve. Test concentrations performed very similarly to dilution control.

Growth: #12 No significant effects at any test concentration with a relatively flat concentration-response curve. Test concentrations performed both above and below (but similarly to) the dilution control.

The concentration - response relationship was reviewed and the following determination was made:

Survival	Growth	
X	X	Results are reliable and reportable
		Results are anomalous (see explanation below)
		Results are inconclusive - retest (see explanation below)

Results Discussion (if applicable):

TEST METHODS

Pimephales promelas

Test type:	Modified Chronic Static Renewal Freshwater Test
Test Reference Manual:	EPA-821-R-02-013 "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms"
Test Method:	*Pimephales promelas* Survival and Growth Test - EPA 1000.0
Temperature:	25 °C ± 1°C (Temperatures should not deviate by more than 3°C during the test) (required)
Light Quality:	Ambient Laboratory Illumination (recommended)
Light Intensity:	10-20 µE/m2/s, or 50-100 ft-c (recommended)
Photoperiod:	16 hours light, 8 hours dark (recommended)
Test chamber size:	600 mL (500 mL is recommended minimum)
Test solution volume:	250 mL (recommended minimum)
Renewal of Test Solutions:	Daily (required)
Age of Test Organisms:	Newly hatched larvae less than 24 hours old (required)
Number of Neonates Per Test Chamber:	10 (recommended)
Number of Replicate Test Chambers Per Treatment:	4 (required minimum)
Number of Neonates Per Test Concentration:	40 (required minimum)
Feeding Regime:	0.15 g twice daily (in the morning prior to renewal and at the end of the work day following renewal) Sufficient nauplii are added to provide an excess. (recommended)
Cleaning:	Siphoned daily, immediately before test solution renewal (required)
Aeration:	None, unless DO concentration falls below 4.0 mg/L, at which point the rate should not exceed 100 bubbles/minute. (recommended)
Test Duration:	7 days (required)
Endpoints:	Survival and growth (weight) (required)
Test Acceptability:	80% or greater survival in controls; average dry weight per surviving organism in control chambers equals or exceeds 0.25 mg (required)
Sampling Requirements:	Minimum of three samples with a maximum holding time of 36 hours before

first use. (required)

Sample volume required: 2.5 L/Day (recommended)

PIMEPHALES PROMELAS
DATASHEETS & STATISTICAL ANALYSIS

NEW ENGLAND BIOASSAY TOXICITY DATA FORM
CHRONIC COVER SHEET

CLIENT:	Patriot Beverages	*P.promelas* TEST ID #	18-1475
ADDRESS:	20 Harvard Road	CHAIN OF CUSTODY #	C38-3718/19
	Littleton, MA 01460	NEB PROJECT #	05.0044697.00
PERMITTEE:	Patriot Beverages	SAMPLE ID:	Outfall 001
PERMIT NUMBER:	MA0004936		
DILUTION WATER:	Soft Synthetic Lab Water		

VERTEBRATES

TEST SET-UP TECHNICIAN:	MM
TEST SPECIES:	*Pimephales promelas*
NEB LOT #	Pp18(10-1)
AGE:	< 24 hours
TEST SOLUTION VOLUME (mls):	400
ORGANISMS PER TEST CHAMBER:	10
ORGANISMS PER CONCENTRATION:	40

LABORATORY CONTROL WATER (SRCF)

Lot Number	Hardness mg/L	Alkalinity mg/L
C38-S022	48	35

	DATE	TIME
TEST START:	10/1/18	1300
TEST END:	10/8/18	1229

COMMENTS: _____

REVIEWED BY: _____ DATE: 11/1/18

NEB'S SURVIVAL DATA SHEET FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460				
NEB PROJECT NUMBER:	05.0044697.00	TEST NUMBER:	18-1475	COC #	C38-3718/19
TEST ORGANISM:	*Pimephales promelas*	AGE:	<24 hours	Lot #	Pp18(10-1)
START DATE:	10/1/18 TIME: 1300	END DATE:	10/8/18	TIME:	1229

Effluent Concentration	Replicate Number	Number of Survivors								
		Day								
		0	1	2	3	4	5	6	7	Remarks
	ANALYST	MM	CD	CD	CD	CD	CW	CW	MM	
NEB Lab Synthetic Diluent	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
Reedy Meadow Brook Control	A	10	10	10	9	8	7	7	7	
	B	10	10	10	9	9	9	9	9	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	7	5	5	5	5	
6.25%	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
12.5%	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
25%	A	10	10	10	10	9	9	9	9	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
50%	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
91%	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	

D.O. concentration fell below 4.0 mg/L _____

All test solutions were aerated at <100 bubbles/minute as of _____

NEB'S SURVIVAL DATA SHEET FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460						
NEB PROJECT NUMBER:	05.0044697.00	TEST NUMBER:	18-1475		COC #	C38-3718/19	
TEST ORGANISM:	*Pimephales promelas*	AGE:	<24 hours		Lot #	Pp18(10-1)	
START DATE:	10/1/18	TIME:	1300	END DATE:	10/8/18	TIME:	1229

Effluent Concentration	Replicate Number	Number of Survivors								
		Day								
		0	1	2	3	4	5	6	7	Remarks
	ANALYST	MM	CD	CD	CD	CD	CW	CW	MM	
100%	A	10	10	10	10	10	10	10	10	
	B	10	10	10	10	10	10	10	10	
	C	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	

NEB Issued:11/1/2018

NEW ENGLAND BIOASSAY OBSERVATION DATA FORM

Permittee: Patriot Beverages Test Species: Pimephales promelas Test ID: 18-1475

Test Date: 10/1/18 Project # 05.0044697.00

Concentration or Dilution	All organisms appear healthy and normal unless noted							
	Day 3 Observations			Date: 10/4/18	Technician: CD			
Lab Diluent	Rep A:		Rep B:		Rep C:		Rep D:	
Brook Control	Rep A:	F	Rep B:	F	Rep C:		Rep D:	F
6.25%	Rep A:		Rep B:		Rep C:		Rep D:	
12.5%	Rep A:		Rep B:		Rep C:		Rep D:	
25%	Rep A:		Rep B:		Rep C:		Rep D:	
50%	Rep A:		Rep B:		Rep C:		Rep D:	
91%	Rep A:		Rep B:		Rep C:		Rep D:	
100%	Rep A:		Rep B:		Rep C:		Rep D:	
	Day 4 Observations			Date: 10/5/18	Technician: CD			
Lab Diluent	Rep A:		Rep B:		Rep C:		Rep D:	
Brook Control	Rep A:	F	Rep B:		Rep C:		Rep D:	F
6.25%	Rep A:		Rep B:		Rep C:		Rep D:	
12.5%	Rep A:		Rep B:		Rep C:		Rep D:	
25%	Rep A:	NF	Rep B:		Rep C:		Rep D:	
50%	Rep A:		Rep B:		Rep C:		Rep D:	
91%	Rep A:		Rep B:		Rep C:		Rep D:	
100%	Rep A:		Rep B:		Rep C:		Rep D:	

F= fungus NF = no fungus SL = slightly lethargic L = lethargic VL = very lethargic TD = tangled in debris MT = missing test organism

TE = technician error (organism accidentally killed by technician) SS = stuck in surface tension DW = dead above water line

NEW ENGLAND BIOASSAY OBSERVATION DATA FORM

Permittee: Patriot Beverages | Test Species: Pimephales promelas | Test ID: 18-1475

Test Date: 10/1/18 | Project # 05.0044697.00

Concentration or Dilution	All organisms appear healthy and normal unless noted							
	Day 5 Observations		Date: 10/6/18		Technician: CW			
Lab Diluent	Rep A:		Rep B:		Rep C:		Rep D:	
Brook Control	Rep A:	F	Rep B:		Rep C:		Rep D:	
6.25%	Rep A:		Rep B:		Rep C:		Rep D:	
12.5%	Rep A:		Rep B:		Rep C:		Rep D:	
25%	Rep A:		Rep B:		Rep C:		Rep D:	
50%	Rep A:		Rep B:		Rep C:		Rep D:	
91%	Rep A:		Rep B:		Rep C:		Rep D:	
100%	Rep A:		Rep B:		Rep C:		Rep D:	
	Day 6 Observations		Date: 10/7/18		Technician: CW			
Lab Diluent	Rep A:		Rep B:		Rep C:		Rep D:	
Brook Control	Rep A:		Rep B:		Rep C:		Rep D:	
6.25%	Rep A:		Rep B:		Rep C:		Rep D:	
12.5%	Rep A:		Rep B:		Rep C:		Rep D:	
25%	Rep A:		Rep B:		Rep C:		Rep D:	
50%	Rep A:		Rep B:		Rep C:		Rep D:	
91%	Rep A:		Rep B:		Rep C:		Rep D:	
100%	Rep A:		Rep B:		Rep C:		Rep D:	

F= fungus NF = no fungus SL = slightly lethargic L = lethargic VL = very lethargic TD = tangled in debris MT = missing test organism

TE = technician error (organism accidentally killed by technician) SS = stuck in surface tension DW = dead above water line

NEW ENGLAND BIOASSAY OBSERVATION DATA FORM

Permittee: Patriot Beverages Test Species: Pimephales promelas Test ID: 18-1475

Test Date: 10/1/18 Project # 05.0044697.00

Concentration or Dilution	All organisms appear healthy and normal unless noted							
	Day 7 Observations		Date: 10/8/18		Technician: MM			
Lab Diluent	Rep A:		Rep B:		Rep C:		Rep D:	
Brook Control	Rep A:		Rep B:		Rep C:		Rep D:	
6.25%	Rep A:		Rep B:		Rep C:		Rep D:	
12.5%	Rep A:		Rep B:		Rep C:		Rep D:	
25%	Rep A:		Rep B:		Rep C:		Rep D:	
50%	Rep A:		Rep B:		Rep C:		Rep D:	
91%	Rep A:		Rep B:		Rep C:		Rep D:	
100%	Rep A:		Rep B:		Rep C:		Rep D:	
	Day Observations		Date:		Technician:			
Lab Diluent	Rep A:		Rep B:		Rep C:		Rep D:	
Brook Control	Rep A:		Rep B:		Rep C:		Rep D:	
6.25%	Rep A:		Rep B:		Rep C:		Rep D:	
12.5%	Rep A:		Rep B:		Rep C:		Rep D:	
25%	Rep A:		Rep B:		Rep C:		Rep D:	
50%	Rep A:		Rep B:		Rep C:		Rep D:	
91%	Rep A:		Rep B:		Rep C:		Rep D:	
100%	Rep A:		Rep B:		Rep C:		Rep D:	

F= fungus NF = no fungus SL = slightly lethargic L = lethargic VL = very lethargic TD = tangled in debris MT = missing test organism

TE = technician error (organism accidentally killed by technician) SS = stuck in surface tension DW = dead above water line

NEW ENGLAND BIOASSAY WEIGHT DATA FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460		
NEB PROJECT #	05.0044697.00	NEB TEST NUMBER:	18-1475
TEST START DATE	10/1/18	WEIGHING DATE:	10/22/18
TEST END DATE	10/8/18		
DRYING TEMPERATURE (°C)	100 ± 4	DRYING TIME:	minimum 6 hours
ANALYST-INITIAL WEIGHTS	TBP	ANALYST-FINAL WEIGHTS	TBP

Effluent Concentration	Replicate Number	A Weight of boat (mg)	B Dry Weight: Foil and Larvae (mg)
NEB Lab Synthetic Diluent	A	933.44	938.24
	B	935.70	940.55
	C	934.48	939.75
	D	939.06	943.85
Reedy Meadow Brook Control	A	932.64	937.08
	B	932.32	937.77
	C	936.74	942.16
	D	935.51	939.35
6.25%	A	932.96	937.48
	B	924.28	929.27
	C	931.59	935.95
	D	930.37	934.93
12.5%	A	931.78	936.37
	B	927.54	932.16
	C	929.77	934.56
	D	929.25	934.25
25%	A	932.04	936.86
	B	931.73	936.97
	C	933.03	937.58
	D	935.11	940.19
50%	A	937.37	942.68
	B	935.47	940.78
	C	926.43	931.22
	D	930.59	935.95
91%	A	934.96	939.80
	B	928.55	933.59
	C	924.86	929.43
	D	932.73	937.95
100%	A	935.80	940.82
	B	932.00	936.62
	C	933.53	937.89
	D	934.91	939.61

Concentration	Rep	Final Weight (mg)	Initial Weight (mg)	Total Weight (mg)	Average per fish (mg)	Mean fish weight (mg)	Standard Deviation
NEB Lab Synthetic Diluent	1	938.24	933.44	4.80	0.480	0.4927	0.02298369
	2	940.55	935.70	4.85	0.485		
	3	939.75	934.48	5.27	0.527		
	4	943.85	939.06	4.79	0.479		
Reedy Meadow Brook Control	1	937.08	932.64	4.44	0.444	0.4787	0.078686615
	2	937.77	932.32	5.45	0.545		
	3	942.16	936.74	5.42	0.542		
	4	939.35	935.51	3.84	0.384		
6.25%	1	937.48	932.96	4.52	0.452	0.4607	0.026924277
	2	929.27	924.28	4.99	0.499		
	3	935.95	931.59	4.36	0.436		
	4	934.93	930.37	4.56	0.456		
12.5%	1	936.37	931.78	4.59	0.459	0.4750	0.018850287
	2	932.16	927.54	4.62	0.462		
	3	934.56	929.77	4.79	0.479		
	4	934.25	929.25	5.00	0.500		
25%	1	936.86	932.04	4.82	0.482	0.4923	0.030269622
	2	936.97	931.73	5.24	0.524		
	3	937.58	933.03	4.55	0.455		
	4	940.19	935.11	5.08	0.508		
50%	1	942.68	937.37	5.31	0.531	0.5193	0.026936654
	2	940.78	935.47	5.31	0.531		
	3	931.22	926.43	4.79	0.479		
	4	935.95	930.59	5.36	0.536		
91%	1	939.80	934.96	4.84	0.484	0.4917	0.027885181
	2	933.59	928.55	5.04	0.504		
	3	929.43	924.86	4.57	0.457		
	4	937.95	932.73	5.22	0.522		
100%	1	940.82	935.80	5.02	0.502	0.4675	0.027196814
	2	936.62	932.00	4.62	0.462		
	3	937.89	933.53	4.36	0.436		
	4	939.61	934.91	4.70	0.470		

Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	08-8806-0576	**Endpoint:**	2d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	22 Oct-18 14:08	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Batch ID:	05-4263-5806	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	01 Oct-18 13:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Receiving Water
Ending Date:	08 Oct-18 12:29	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	6d 23h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	01-4623-4759	**Code:**	8B75D87	**Project:**	
Sample Date:	01 Oct-18 09:00	**Material:**	Industrial Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	01 Oct-18 09:55	**CAS (PC):**		**Station:**	
Sample Age:	4h	**Client:**	Patriot Beverages		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X)	Linear	1932831	200	Yes	Two-Point Interpolation

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
LC50	>100	n/a	n/a	<1	n/a	n/a

2d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-%	**Code**	**Count**	**Mean**	**Min**	**Max**	**Std Dev**	**CV%**	**%Effect**	**A/B**	**Mean**	**%Effect**
0	D	4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
6.25		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
12.5		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
25		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
50		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
91		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
100		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%

2d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
91		1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000

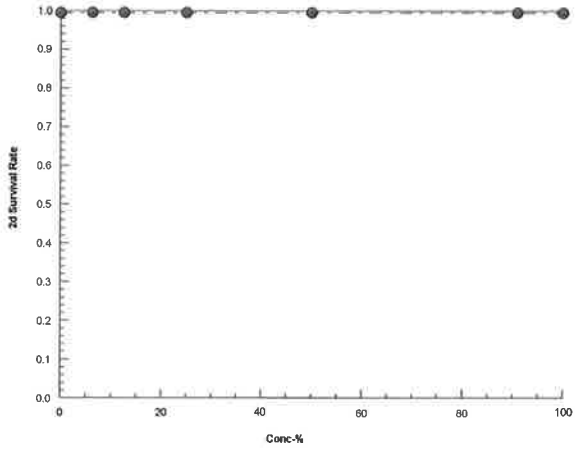
2d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	10/10	10/10
6.25		10/10	10/10	10/10	10/10
12.5		10/10	10/10	10/10	10/10
25		10/10	10/10	10/10	10/10
50		10/10	10/10	10/10	10/10
91		10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Fathead Minnow 7-d Larval Survival and Growth Test **New England Bioassay**

Analysis ID:	08-8806-0576	**Endpoint:**	2d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	22 Oct-18 14:08	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1

Graphics



Fathead Minnow 7-d Larval Survival and Growth Test

New England Bioassay

Analysis ID:	13-2283-2330	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	22 Oct-18 14:08	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Batch ID:	05-4263-5806	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	01 Oct-18 13:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Receiving Water
Ending Date:	08 Oct-18 12:29	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	6d 23h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	01-4623-4759	**Code:**	8B75D87	**Project:**	
Sample Date:	01 Oct-18 09:00	**Material:**	Industrial Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	01 Oct-18 09:55	**CAS (PC):**		**Station:**	
Sample Age:	4h	**Client:**	Patriot Beverages		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X)	Linear	2040137	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	1	0.8	>>	Yes	Passes Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
LC50	>100	n/a	n/a	<1	n/a	n/a

7d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-%	**Code**	**Count**	**Mean**	**Min**	**Max**	**Std Dev**	**CV%**	**%Effect**	**A/B**	**Mean**	**%Effect**
0	D	4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
6.25		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
12.5		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
25		4	0.9750	0.9000	1.0000	0.0500	5.13%	2.5%	39/40	0.9937	0.63%
50		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	0.9937	0.63%
91		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	0.9937	0.63%
100		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	0.9937	0.63%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		0.9000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
91		1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000

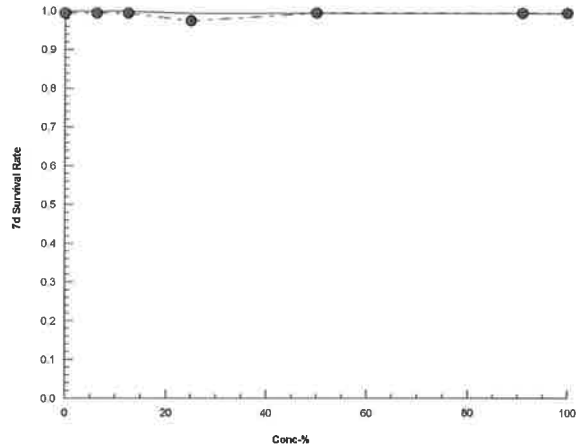
7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	10/10	10/10
6.25		10/10	10/10	10/10	10/10
12.5		10/10	10/10	10/10	10/10
25		10/10	10/10	10/10	10/10
50		10/10	10/10	10/10	10/10
91		10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Fathead Minnow 7-d Larval Survival and Growth Test **New England Bioassay**

Analysis ID:	13-2283-2330	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	22 Oct-18 14:08	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1

Graphics



Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	00-1166-7388	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	22 Oct-18 14:08	**Analysis:**	Nonparametric-Control vs Treatments	**Status Level:**	1
Batch ID:	05-4263-5806	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	01 Oct-18 13:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Receiving Water
Ending Date:	08 Oct-18 12:29	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	6d 23h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	01-4623-4759	**Code:**	8B75D87	**Project:**	
Sample Date:	01 Oct-18 09:00	**Material:**	Industrial Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	01 Oct-18 09:55	**CAS (PC):**		**Station:**	
Sample Age:	4h	**Client:**	Patriot Beverages		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	100	>100	n/a	1	4.43%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Dilution Water		6.25	18	10	1	6	Asymp	0.8571	Non-Significant Effect
		12.5	18	10	1	6	Asymp	0.8571	Non-Significant Effect
		25	16	10	1	6	Asymp	0.6451	Non-Significant Effect
		50	18	10	1	6	Asymp	0.8571	Non-Significant Effect
		91	18	10	1	6	Asymp	0.8571	Non-Significant Effect
		100	18	10	1	6	Asymp	0.8571	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	1	0.8	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0056913	0.0009485	6	1	0.4512	Non-Significant Effect
Error	0.0199195	0.0009485	21			
Total	0.0256108		27			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	9	3.812	6.2E-05	Unequal Variances
Variances	Mod Levene Equality of Variance Test	1	3.812	0.4512	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.4261	0.8975	2.1E-09	Non-Normal Distribution

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6.25		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
12.5		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25		4	0.9750	0.8954	1.0000	1.0000	0.9000	1.0000	0.0250	5.13%	2.50%
50		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
91		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
6.25		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
12.5		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
25		4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	2.89%
50		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
91		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
100		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%

Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	00-1166-7388	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv1.9.4
Analyzed:	22 Oct-18 14:08	**Analysis:**	Nonparametric-Control vs Treatments	**Status Level:**	1

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		0.9000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
91		1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000

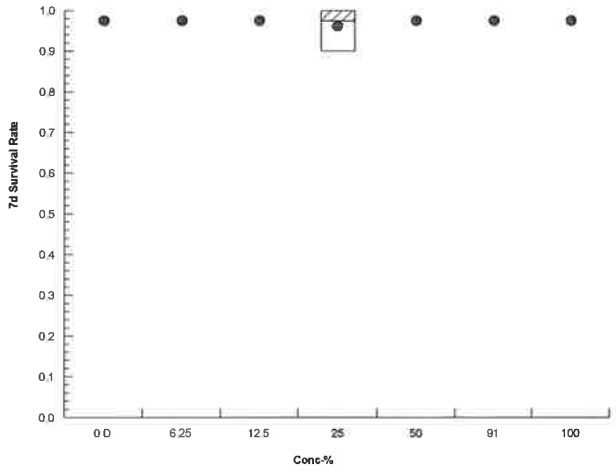
Angular (Corrected) Transformed Detail

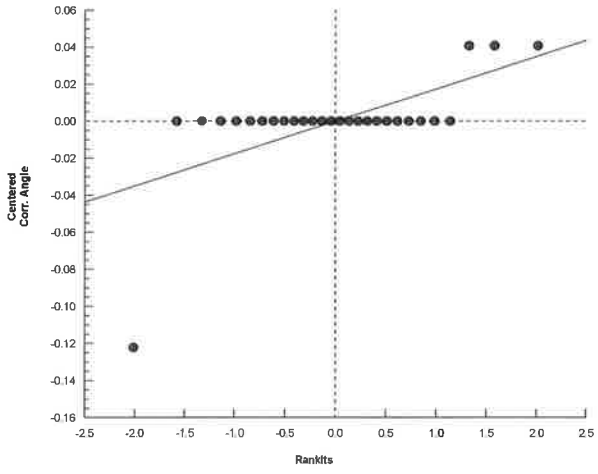
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.412	1.412	1.412	1.412
6.25		1.412	1.412	1.412	1.412
12.5		1.412	1.412	1.412	1.412
25		1.249	1.412	1.412	1.412
50		1.412	1.412	1.412	1.412
91		1.412	1.412	1.412	1.412
100		1.412	1.412	1.412	1.412

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	10/10	10/10
6.25		10/10	10/10	10/10	10/10
12.5		10/10	10/10	10/10	10/10
25		9/10	10/10	10/10	10/10
50		10/10	10/10	10/10	10/10
91		10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Graphics





Fathead Minnow 7-d Larval Survival and Growth Test — **New England Bioassay**

Analysis ID:	16-5815-2640	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.4
Analyzed:	29 Oct-18 10:08	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Batch ID:	05-4263-5806	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	01 Oct-18 13:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Receiving Water
Ending Date:	08 Oct-18 12:29	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	6d 23h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	01-4623-4759	**Code:**	8B75D87	**Project:**	
Sample Date:	01 Oct-18 09:00	**Material:**	Industrial Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	01 Oct-18 09:55	**CAS (PC):**		**Station:**	
Sample Age:	4h	**Client:**	Patriot Beverages		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	100	>100	n/a	1	9.17%

Dunnett Multiple Comparison Test

Control vs	Conc-%	Test Stat	Critical	MSD	DF	P-Type	P-Value	Decision(α:5%)
Dilution Water	6.25	1.734	2.448	0.045	6	CDF	0.1765	Non-Significant Effect
	12.5	0.9618	2.448	0.045	6	CDF	0.4713	Non-Significant Effect
	25	0.02704	2.448	0.045	6	CDF	0.8497	Non-Significant Effect
	50	-1.436	2.448	0.045	6	CDF	0.9966	Non-Significant Effect
	91	0.05408	2.448	0.045	6	CDF	0.8420	Non-Significant Effect
	100	1.368	2.448	0.045	6	CDF	0.2973	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	0.4927	0.25	>>	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0092925	0.0015488	6	2.274	0.0756	Non-Significant Effect
Error	0.014304	0.0006811	21			
Total	0.0235965		27			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	0.7119	16.81	0.9942	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9569	0.8975	0.2935	Normal Distribution

Mean Dry Biomass-mg Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	0.4927	0.4562	0.5293	0.4825	0.479	0.527	0.01149	4.66%	0.00%
6.25		4	0.4607	0.4179	0.5036	0.454	0.436	0.499	0.01346	5.84%	6.49%
12.5		4	0.475	0.445	0.505	0.4705	0.459	0.5	0.009426	3.97%	3.60%
25		4	0.4923	0.4441	0.5404	0.495	0.455	0.524	0.01513	6.15%	0.10%
50		4	0.5193	0.4764	0.5621	0.531	0.479	0.536	0.01347	5.19%	-5.38%
91		4	0.4918	0.4474	0.5361	0.494	0.457	0.522	0.01394	5.67%	0.20%
100		4	0.4675	0.4242	0.5108	0.466	0.436	0.502	0.0136	5.82%	5.12%

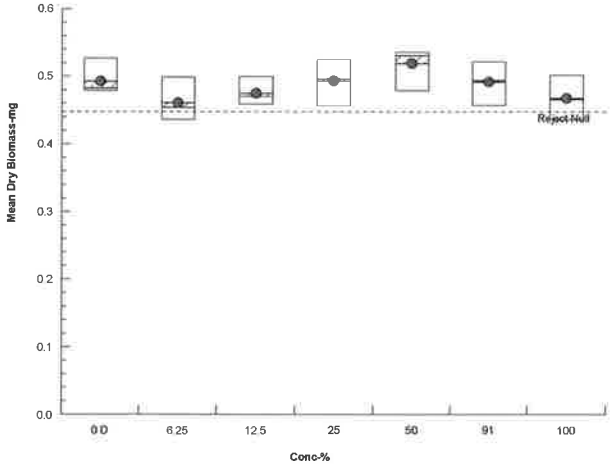
Mean Dry Biomass-mg Detail

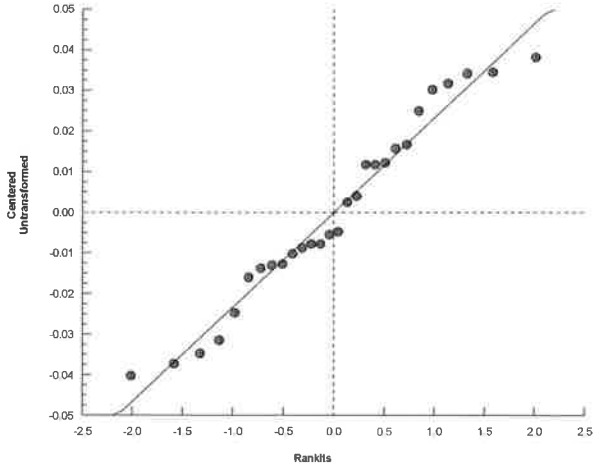
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	0.48	0.485	0.527	0.479
6.25		0.452	0.499	0.436	0.456
12.5		0.459	0.462	0.479	0.5
25		0.482	0.524	0.455	0.508
50		0.531	0.531	0.479	0.536
91		0.484	0.504	0.457	0.522
100		0.502	0.462	0.436	0.47

Fathead Minnow 7-d Larval Survival and Growth Test **New England Bioassay**

Analysis ID:	16-5815-2640	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.4
Analyzed:	29 Oct-18 10:08	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1

Graphics





Fathead Minnow 7-d Larval Survival and Growth Test

New England Bioassay

Analysis ID:	07-1304-8737	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.4
Analyzed:	29 Oct-18 10:08	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Batch ID:	05-4263-5806	**Test Type:**	Growth-Survival (7d)	**Analyst:**	
Start Date:	01 Oct-18 13:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Receiving Water
Ending Date:	08 Oct-18 12:29	**Species:**	Pimephales promelas	**Brine:**	Not Applicable
Test Length:	6d 23h	**Taxon:**	Actinopterygii	**Source:**	In-House Culture **Age:** <24
Sample ID:	01-4623-4759	**Code:**	8B75D87	**Project:**	
Sample Date:	01 Oct-18 09:00	**Material:**	Industrial Effluent	**Source:**	Patriot Beverages (MA0004936)
Receipt Date:	01 Oct-18 09:55	**CAS (PC):**		**Station:**	
Sample Age:	4h	**Client:**	Patriot Beverages		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	2048664	200	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	0.4927	0.25	>>	Yes	Passes Criteria

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>100	n/a	n/a	<1	n/a	n/a
IC50	>100	n/a	n/a	<1	n/a	n/a

Mean Dry Biomass-mg Summary

			Calculated Variate						Isotonic Variate	
Conc-%	**Code**	**Count**	**Mean**	**Min**	**Max**	**Std Dev**	**CV%**	**%Effect**	**Mean**	**%Effect**
0	D	4	0.4927	0.479	0.527	0.02299	4.67%	0.0%	0.4927	0.0%
6.25		4	0.4607	0.436	0.499	0.02692	5.84%	6.49%	0.4878	1.0%
12.5		4	0.475	0.459	0.5	0.01885	3.97%	3.6%	0.4878	1.0%
25		4	0.4923	0.455	0.524	0.03027	6.15%	0.1%	0.4878	1.0%
50		4	0.5193	0.479	0.536	0.02694	5.19%	-5.38%	0.4878	1.0%
91		4	0.4918	0.457	0.522	0.02789	5.67%	0.2%	0.4878	1.0%
100		4	0.4675	0.436	0.502	0.0272	5.82%	5.12%	0.4675	5.12%

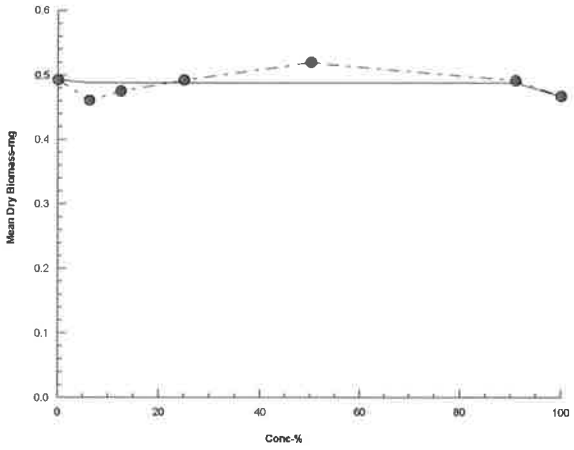
Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	0.48	0.485	0.527	0.479
6.25		0.452	0.499	0.436	0.456
12.5		0.459	0.462	0.479	0.5
25		0.482	0.524	0.455	0.508
50		0.531	0.531	0.479	0.536
91		0.484	0.504	0.457	0.522
100		0.502	0.462	0.436	0.47

Fathead Minnow 7-d Larval Survival and Growth Test | **New England Bioassay**

Analysis ID:	07-1304-8737	**Endpoint:**	Mean Dry Biomass-mg	**CETIS Version:**	CETISv1.9.4
Analyzed:	29 Oct-18 10:08	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1

Graphics



NEB'S DATA SHEET FOR ROUTINE CHEMICAL AND PHYSICAL DETERMINATIONS

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460							
NEB PROJECT NUMBER:	05.0044697.00			TEST ORGANISM			*Pimephales promelas*	
DILUTION WATER SOURCE:	Soft Synthetic Lab Water			START DATE:			10/1/18 TIME:	1300
ANALYST	MM	CD	KO	CD	MM	KO	KO	
NEB Lab Synthetic Diluent	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.7	25.5	26.0	26.0	25.8	25.0	25.7	
D.O. mg/L Initial	8.2	8.2	8.1	8.1	8.8	8.4	8.3	
pH s.u. Initial	7.3	7.8	7.5	7.7	7.5	7.5	7.6	
Conductivity µS Initial	177	178	176	176	183	185	187	
Temp °C Final	25.6	25.2	26.0	25.6	25.2	25.2	25.5	
D.O. mg/L Final	7.0	6.3	6.2	6.1	7.2	7.1	7.1	
pH s.u. Final	7.5	7.2	7.3	7.4	7.2	7.1	7.4	
Conductivity µS Final	201	190	198	202	209	219	205	
Brook Control	1	2	3	4	5	6	7	Remarks
Temp °C Initial	26.0	25.6	25.1	26.0	24.8	25.0	24.9	
D.O. mg/L Initial	7.9	8.8	8.2	8.8	7.7	8.5	9.2	
pH s.u. Initial	7.1	7.0	6.8	7.2	6.6	6.9	6.9	
Conductivity µS Initial	325	325	287	287	287	287	289	
Temp °C Final	25.4	25.2	26.0	25.6	25.4	25.1	25.5	
D.O. mg/L Final	7.1	6.4	6.2	6.7	7.2	6.8	6.9	
pH s.u. Final	7.3	7.1	7.1	7.3	6.9	7.0	7.1	
Conductivity µS Final	347	336	313	313	311	319	305	
6.25%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.6	25.6	25.5	26.0	26.0	25.0	25.9	
D.O. mg/L Initial	8.3	8.3	8.3	8.1	8.8	8.4	8.3	
pH s.u. Initial	8.2	8.5	8.3	8.3	8.4	8.5	8.4	
Conductivity µS Initial	347	339	336	346	374	365	373	
Temp °C Final	25.5	25.3	26.0	25.7	25.3	25.3	25.6	
D.O. mg/L Final	6.9	6.1	6.9	6.7	7.3	7.3	7.1	
pH s.u. Final	8.1	7.8	7.5	8.1	8.1	7.6	8.0	
Conductivity µS Final	369	351	354	370	397	395	391	
12.5%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.4	25.7	25.8	26.0	26.0	25.0	25.9	
D.O. mg/L Initial	8.3	8.3	8.2	8.2	8.8	8.4	8.3	
pH s.u. Initial	8.4	8.7	8.5	8.5	8.5	8.6	8.6	
Conductivity µS Initial	473	520	489	507	510	519	526	
Temp °C Final	25.4	25.3	26.0	25.7	25.3	25.3	25.6	
D.O. mg/L Final	7.5	6.3	6.1	6.8	7.2	7.4	7.1	
pH s.u. Final	8.4	8.3	8.0	8.4	8.3	8.1	8.3	
Conductivity µS Final	495	530	511	531	536	548	543	

NEB'S DATA SHEET FOR ROUTINE CHEMICAL AND PHYSICAL DETERMINATIONS

FACILITY NAME & ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460							
NEB PROJECT NUMBER:	05.0044697.00			TEST ORGANISM			*Pimephales promelas*	
DILUTION WATER SOURCE:	Soft Synthetic Lab Water			START DATE:			10/1/18 TIME: 1300	
25%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.5	25.6	25.7	26.0	26.0	25.0	26.0	
D.O. mg/L Initial	8.4	8.4	8.3	8.3	8.8	8.4	8.4	
pH s.u. Initial	8.6	8.7	8.6	8.6	8.6	8.7	8.6	
Conductivity µS Initial	810	828	808	807	880	854	861	
Temp °C Final	25.4	25.3	26.0	25.6	25.2	25.2	25.6	
D.O. mg/L Final	7.3	5.9	5.8	6.9	7.2	7.5	7.1	
pH s.u. Final	8.7	8.6	8.5	8.7	8.6	8.5	8.6	
Conductivity µS Final	829	841	833	830	900	890	880	
50%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.4	25.5	25.8	25.7	25.9	25.1	26.0	
D.O. mg/L Initial	8.5	8.7	8.4	8.6	9.0	8.5	8.5	
pH s.u. Initial	8.6	8.8	8.6	8.6	8.6	8.7	8.6	
Conductivity µS Initial	1,423	1,465	1,450	1,434	1,542	1,534	1,537	
Temp °C Final	25.3	25.2	26.0	25.7	25.2	25.2	25.6	
D.O. mg/L Final	7.3	6.4	6.0	6.8	7.3	7.5	7.4	
pH s.u. Final	8.8	8.8	8.7	8.8	8.8	8.7	8.8	
Conductivity µS Final	1,447	1,482	1,474	1,463	1,562	1,575	1,559	
91%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.3	25.4	25.4	25.1	25.5	25.1	26.0	
D.O. mg/L Initial	9.1	9.2	8.8	9.2	9.2	8.7	8.8	
pH s.u. Initial	8.7	8.7	8.6	8.6	8.6	8.7	8.6	
Conductivity µS Initial	2,452	2,428	2,424	2,422	2,531	2,598	2,572	
Temp °C Final	25.6	25.3	26.0	25.7	25.3	25.1	25.6	
D.O. mg/L Final	7.4	6.6	6.0	6.9	7.3	7.6	7.1	
pH s.u. Final	8.8	8.8	8.8	8.8	8.8	8.7	8.8	
Conductivity µS Final	2,464	2,453	2,445	2,443	2,539	2,593	2,569	
100%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.0	25.2	25.1	24.7	25.2	25.1	26.0	
D.O. mg/L Initial	9.7	9.9	9.4	9.8	9.6	9.4	9.3	
pH s.u. Initial	8.7	8.7	8.6	8.6	8.6	8.7	8.6	
Conductivity µS Initial	2,651	2,653	2,655	2,645	2,814	2,821	2,826	
Temp °C Final	25.5	25.3	26.0	25.7	25.4	25.3	25.7	
D.O. mg/L Final	7.3	6.8	6.5	7.0	7.3	7.2	7.4	
pH s.u. Final	8.9	8.8	8.8	8.8	8.8	8.7	8.8	
Conductivity µS Final	2,644	2,669	2,667	2,655	2,807	2,816	2,807	

Table of Random Permutations of 16 **P.promelas Test ID#** 18-1475

7	12	15	15	1	2	7	16	10	2	14	15	7	13	13	10	6	1	8	10
13	3	8	16	7	10	11	10	13	5	11	7	13	16	7	7	5	13	2	14
3	1	4	5	14	13	3	14	9	13	13	2	9	15	6	2	8	4	5	8
11	8	16	14	15	6	2	6	2	16	8	5	12	3	9	13	4	3	10	4
14	9	1	6	3	9	14	13	8	6	5	8	14	7	3	15	13	11	4	7
2	16	10	13	5	5	13	2	11	7	3	12	5	14	12	16	2	2	9	15
4	6	13	7	2	15	1	9	1	4	7	10	6	9	11	9	7	6	16	11
6	14	6	10	4	14	4	15	3	3	4	16	2	6	5	1	12	10	6	9
10	15	2	1	13	12	16	3	4	8	10	1	15	5	14	12	14	12	3	2
12	10	7	12	9	11	9	8	12	14	15	4	11	8	16	8	9	14	14	1
15	7	5	2	10	7	8	12	6	15	6	13	16	12	15	4	11	8	12	6
16	2	11	8	8	8	15	5	16	1	1	9	8	1	8	14	16	5	13	5
9	13	14	3	6	4	10	11	5	12	9	3	10	4	4	3	10	9	1	3
8	11	9	4	11	3	12	7	7	10	12	14	3	10	1	6	15	16	15	12
1	5	12	11	16	16	5	4	14	9	16	11	1	2	10	5	1	15	7	13
5	4	3	9	12	1	6	1	15	11	2	6	4	11	2	11	3	7	11	16
				conc															rep
11	8	16	5	5	13	1	13	2	16	14	12	9	8	7	5	13	3	13	3
2	2	8	8	14	16	4	3	8	11	10	14	15	1	2	11	4	5	15	9
6	13	2	13	6	5	9	15	11	10	12	6	16	15	16	9	10	12	16	15
14	12	4	16	16	11	14	10	5	12	3	3	12	14	15	13	6	4	1	16
8	6	3	9	4	10	6	4	16	2	2	9	8	16	4	6	5	15	7	8
9	15	12	10	3	2	12	6	1	15	4	13	7	7	9	12	14	8	8	11
3	10	11	12	13	12	5	11	7	8	9	5	14	11	10	1	3	13	3	5
16	1	13	14	8	14	15	5	3	7	11	15	6	12	5	7	11	1	14	4
1	14	14	2	9	15	16	14	6	14	7	8	3	13	11	8	7	7	12	7
4	4	6	4	12	3	11	8	15	9	8	1	13	6	3	3	15	9	9	12
15	5	1	11	10	6	3	7	10	5	5	11	10	10	12	15	16	14	5	2
5	3	5	6	7	7	13	2	14	3	16	4	5	5	13	4	9	16	2	6
12	7	15	15	15	9	8	12	12	13	15	10	1	4	6	16	2	6	11	1
10	11	10	3	2	4	2	1	4	6	6	7	11	9	14	10	8	11	4	13
7	9	7	7	11	1	7	16	13	1	13	2	4	2	1	2	12	2	10	14
13	16	9	1	1	8	10	9	9	4	1	16	2	3	8	14	1	10	6	10
1	6	7	4	8	6	5	2	8	15	4	6	6	1	4	5	7	13	2	10
9	15	11	3	11	15	9	10	1	3	8	2	15	7	9	8	16	1	14	3
10	16	4	5	12	9	16	11	7	1	7	16	11	8	3	3	12	2	3	4
4	14	1	9	5	5	4	13	6	8	15	5	12	5	7	16	5	11	8	1
7	3	13	14	15	2	1	14	16	5	14	9	2	16	1	12	6	14	4	13
16	11	2	1	14	16	6	9	3	4	16	14	3	15	11	11	3	9	12	5
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11	13	9	13	4	13	8	3	5	13	10	12	5	12	5	14	13	16	5	6
15	2	3	12	9	12	2	4	13	10	3	13	14	4	2	1	14	8	6	12
14	1	14	6	10	1	3	12	4	2	2	4	13	3	16	9	9	3	7	14
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12	5	10	7	2	14	7	15	14	16	13	1	9	10	12	10	11	10	9	8
8	9	8	10	6	4	11	7	10	11	6	8	4	9	8	15	8	6	11	9
2	7	6	2	1	8	10	6	15	12	1	11	7	11	13	6	1	15	13	15
6	4	15	8	16	10	14	16	9	6	12	3	10	6	14	7	2	12	16	7
5	8	12	15	7	3	12	5	12	9	5	15	1	13	15	13	15	5	1	2
13	4	10	4	16	13	16	13	5	3	6	14	1	16	8	7	2	3	3	12
5	14	4	6	8	2	15	1	13	14	16	4	15	4	3	12	12	1	4	7
2	2	2	15	14	16	9	12	16	6	10	15	14	9	10	1	14	8	8	16
7	12	15	8	12	3	5	14	7	12	5	13	16	1	7	5	11	2	9	3
6	9	7	14	9	14	10	11	15	11	12	1	12	12	14	16	3	11	11	8
14	5	16	7	10	8	11	8	14	13	7	11	6	3	11	4	4	6	6	9
15	11	8	9	7	12	8	7	1	15	9	3	3	7	13	11	10	4	5	1
11	6	6	1	4	1	3	16	12	5	4	9	13	13	6	8	15	9	1	14
4	10	3	16	2	11	7	9	6	9	1	8	4	11	5	2	16	10	12	4
1	8	1	13	1	15	4	4	11	4	2	16	5	8	1	9	5	12	16	6
9	7	14	2	6	4	14	10	9	8	15	10	7	10	9	10	6	14	10	11
12	1	9	10	15	5	2	15	10	2	14	2	8	2	4	13	8	5	15	5
3	3	12	11	5	9	6	6	3	10	13	12	9	6	2	15	7	15	7	13
10	15	11	5	13	7	12	5	2	7	11	5	10	15	12	3	1	13	13	10
8	13	13	3	3	10	13	2	4	1	8	6	11	14	15	6	9	16	2	2
16	16	5	12	11	6	1	3	8	16	3	7	2	5	16	14	13	7	14	15

CHEMICAL ANALYSIS

Please note the subcontract laboratory has its own QAQC and data review processes, and therefore New England Bioassay does not review the analytical results we receive.

PHOENIX
Environmental Laboratories, Inc.

Friday, October 05, 2018

Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Project ID: PATRIOT BEVERAGES
Sample ID#s: CB62352 - CB62355

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Telephone (860) 645-1102 Fax (860) 645-0823

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 05, 2018

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		10/01/18	7:00
Location Code:	NEB	Received by:	SW	10/01/18	16:42
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22345				

Laboratory Data

SDG ID: GCB62352
Phoenix ID: CB62352

Project ID: PATRIOT BEVERAGES
Client ID: EFFLUENT-1

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Aluminum	0.054	0.005	mg/L	1	10/04/18	TH	E200.7
Cadmium	< 0.0001	0.0001	mg/L	1	10/03/18	RS	SM3113B
Copper	0.0017	0.0010	mg/L	1	10/04/18	TH	E200.7
Hardness (CaCO3)	86.3	0.1	mg/L	1	10/04/18		E200.7
Nickel	0.011	0.001	mg/L	1	10/04/18	TH	E200.7
Lead	< 0.0003	0.0003	mg/L	1	10/03/18	RS	SM3113B
Zinc	0.025	0.002	mg/L	1	10/04/18	TH	E200.7
Alkalinity-CaCO3	1240	5.00	mg/L	1	10/02/18	RWR	SM2320B-11
Conductivity	2510	5.00	umhos/cm	1	10/02/18	RR/EG	SM2510B-11
Ammonia as Nitrogen	0.08	0.05	mg/L	1	10/04/18	KDB	E350.1
Tot. Diss. Solids	1600	10	mg/L	1	10/02/18	MM/EG	SM2540C-11
Tot. Org. Carbon	7.2	0.50	mg/L	1	10/03/18	RWR	SM5310B-11
Total Solids	1700	20	mg/L	2	10/04/18	EG	SM2540B-11
Total Metals Digestion	Completed				10/03/18	AG	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director
October 05, 2018
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 05, 2018

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		10/01/18	6:45
Location Code:	NEB	Received by:	SW	10/01/18	16:42
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22345				

Laboratory Data

SDG ID: GCB62352
Phoenix ID: CB62353

Project ID: PATRIOT BEVERAGES
Client ID: RECEIVING WATER-1

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Aluminum	0.122	0.005	mg/L	1	10/04/18	TH	E200.7
Cadmium	< 0.0001	0.0001	mg/L	1	10/03/18	RS	SM3113B
Copper	0.0025	0.0010	mg/L	1	10/04/18	TH	E200.7
Hardness (CaCO3)	60.9	0.1	mg/L	1	10/04/18		E200.7
Nickel	0.004	0.001	mg/L	1	10/04/18	TH	E200.7
Lead	< 0.0003	0.0003	mg/L	1	10/03/18	RS	SM3113B
Zinc	0.008	0.002	mg/L	1	10/04/18	TH	E200.7
Alkalinity-CaCO3	36.4	5.00	mg/L	1	10/02/18	RWR	SM2320B-11
Conductivity	313	5.00	umhos/cm	1	10/02/18	RR/EG	SM2510B-11
Ammonia as Nitrogen	0.14	0.05	mg/L	1	10/04/18	KDB	E350.1
pH	7.07	1.00	pH Units	1	10/02/18 00:24	RR/EG	SM4500-H B-11
Tot. Org. Carbon	13.1	0.50	mg/L	1	10/02/18	RWR	SM5310B-11
Total Metals Digestion	Completed				10/03/18	AG	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director
October 05, 2018
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 05, 2018

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		10/01/18	7:00
Location Code:	NEB	Received by:	SW	10/01/18	16:42
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22345				

Laboratory Data

SDG ID: GCB62352
Phoenix ID: CB62354

Project ID: PATRIOT BEVERAGES
Client ID: EFFLUENT GRAB-1

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chlorine Residual	0.03	0.02	mg/L	1	10/01/18 18:45	O	SM4500CLG-97
pH	8.71	1.00	pH Units	1	10/02/18 00:48	RR/EG	SM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services.

Phyllis Shiller, Laboratory Director
October 05, 2018
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 05, 2018

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WATER	Collected by:		10/01/18	9:20
Location Code:	NEB	Received by:	SW	10/01/18	16:42
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22345				

Laboratory Data

SDG ID: GCB62352
Phoenix ID: CB62355

Project ID: PATRIOT BEVERAGES
Client ID: SRCF LAB WATER C38-5022

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Aluminum	< 0.010	0.010	mg/L	1	10/04/18	TH	SW6010C/E200.7
Cadmium	< 0.0001	0.0001	mg/L	1	10/03/18	RS	SM3113B/SW7010-10
Copper	< 0.0020	0.0020	mg/L	1	10/04/18	TH	SW6010C/E200.7
Hardness (CaCO3)	48.2	0.1	mg/L	1	10/04/18		E200.7
Nickel	< 0.001	0.001	mg/L	1	10/04/18	TH	SW6010C/E200.7
Lead	< 0.0003	0.0003	mg/L	1	10/03/18	RS	SM3113B/SW7010
Zinc	< 0.004	0.004	mg/L	1	10/04/18	TH	SW6010C/E200.7
Alkalinity-CaCO3	40.4	5.00	mg/L	1	10/02/18	RWR	SM2320B-11
Conductivity	176	5.00	umhos/cm	1	10/02/18	RR/EG	SM2510B-11
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	10/04/18	KDB	E350.1
pH	7.67	1.00	pH Units	1	10/02/18 00:53	RR/EG	SM4500-H B-11
Tot. Org. Carbon	< 0.50	0.50	mg/L	1	10/02/18	RWR	SM5310B-11
Total Metals Digestion	Completed				10/02/18	AG	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director
October 05, 2018
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

October 05, 2018

QA/QC Data

SDG I.D.: GCB62352

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 449963 (mg/L), QC Sample No: CB61462 (CB62355)													
ICP Metals - Aqueous													
Aluminum	BRL	0.010	<0.010	<0.010	NC	98.8			94.9			75 - 125	20
Copper	BRL	0.005	<0.005	<0.005	NC	105			107			75 - 125	20
Nickel	BRL	0.001	0.015	0.015	0	103			102			75 - 125	20
Zinc	BRL	0.004	<0.004	<0.004	NC	102			103			75 - 125	20
QA/QC Batch 450091 (mg/L), QC Sample No: CB62208 (CB62352, CB62353)													
ICP Metals - Aqueous													
Aluminum	BRL	0.0050	0.039	0.0419	7.20	99.6			102			75 - 125	20
Copper	BRL	0.0025	<0.003	<0.0025	NC	98.0			98.6			75 - 125	20
Nickel	BRL	0.0005	<0.001	<0.0010	NC	96.7			94.7			75 - 125	20
Zinc	BRL	0.0020	0.002	0.0023	NC	92.7			92.1			75 - 125	20
QA/QC Batch 449923 (mg/L), QC Sample No: CB62353 (CB62352, CB62353, CB62355)													
Cadmium - Water	BRL	0.0001	<0.0001	<0.0001	NC	109			103			75 - 125	20
Lead (Furnace) - Water	BRL	0.001	<0.0003	<0.001	NC	107			104			75 - 125	30

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

October 05, 2018

QA/QC Data

SDG I.D.: GCB62352

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 449873 (mg/L), QC Sample No: CB60940 (CB62352)													
Tot. Diss. Solids	BRL	10	82	75	8.90	101						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 449935 (mg/L), QC Sample No: CB61515 (CB62353, CB62355)													
Total Organic Carbon	BRL	1.0	1.1	1.1	NC	105			96.0			85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 449862 (mg/L), QC Sample No: CB61661 (CB62352, CB62353, CB62354, CB62355)													
Alkalinity-CaCO3	BRL	5.00	282	280	0.70	97.6						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 450130 (mg/L), QC Sample No: CB61661 (CB62352, CB62353, CB62354, CB62355)													
Alkalinity-CaCO3	BRL	5.00	282	280	0.70	97.6						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 449870 (umhos/cm), QC Sample No: CB61661 (CB62352, CB62353, CB62354, CB62355)													
Conductivity	BRL	5.00	609	607	0.30	95.9						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 449857 (pH), QC Sample No: CB61661 (CB62353, CB62354, CB62355)													
pH			8.01	8.03	0.20	98.5						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 449792 (mg/L), QC Sample No: CB62141 (CB62354)													
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	114							
QA/QC Batch 450030 (mg/L), QC Sample No: CB62188 (CB62352, CB62353, CB62355)													
Ammonia as Nitrogen	BRL	0.05	<0.10	<0.10	NC	110			110			90 - 110	20
QA/QC Batch 450289 (mg/L), QC Sample No: CB62352 (CB62352)													
Total Solids	BRL	10	1700	1700	0	96.0						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													

QA/QC Data

SDG I.D.: GCB62352

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
October 05, 2018

Friday, October 05, 2018

Criteria: None

State: MA

Sample Criteria Exceedances Report

GCB62352 - NEB

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac
NY # 11301

Analysis Comments

October 05, 2018 SDG I.D.: GCB62352

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

WCID

CHAIN OF CUSTODY RECORD

PHOENIX *Environmental Laboratories, Inc.*

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: service@phoenixlabs.com   Fax (860) 645-0823
Client Services (860) 645-8726

Temp 3.4 Pg ___ of ___

Data Delivery (check one):
☐ Fax #: ___
☒ Email: kimberly.wills@gza.com
Format: ☐ Excel ☐ Pdf ☐ Gis Key

Customer: New England Bioassay
Address: 77 Batson Drive
Manchester, CT 06042

Project: Patriot Beverages (MA)
Report to: Kim Wills
Invoice to: Kim Wills

Project P.O: 22345
Phone #: 860-643-9560
Fax #: 860-646-7169

Client Sample - Information - Identification

Sampler's Signature ___ Date ___

Matrix Code:
DW=drinking water WW=wastewater S=soil/solid O=other
GW=groundwater SL=sludge A=air

Analysis Request

Phoenix Sample #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	Hardness (0.5 mg/L)	Alkalinity (2.0 mg/L)	Specific Conductance (–)	Total Solids (–)	Total Dissolved Solids (–)	Ammonia (0.1 mg/L)	Total Organic Carbon (0.5 mg/L)	Cd (AA), Pb (AA), Cu, Zn, Ni, Al	Total Residual Chlorine (0.02 mg/L)	pH (–)		Soil VOA Vials [ ] methanol [ ] Sod Bisulfate	GL Soil container ( ) oz	PL As Is 250 ml	PL 120ml As Is	GL Amber 120ml	PL As Is [X] 500ml [ ] 1000ml	PL H2SO4 [X] 250ml [ ] 1000ml (H3PO4)	PL HNO3 [X] 250ml [ ] 1000ml	PL NaOH 250ml	Bacteria Bottle
102352	Effluent-1	WW	9/30-10/1/18	0800-0700	X	X	X	X	X	X	X	X								1	1	1	1		
102353	Receiving Water-1	O	10/1/18	0645	X	X	X			X	X	X		X						1	1	1	1		
102354	Effluent grab-1	WW	10/1/18	0700									X	X				1							
102355	SRCF lab water (C36-5022)	O	10/1/18	0920	X	X	X			X	X	X		X						1	1	1	1		

Relinquished by:	Accepted by:	Date:	Time:
[signature]	[signature]	10-1-18	1610
[signature]	[signature]	10-1-18	1042

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☒ Standard
☐ Other

* Surcharge Applies

Requirements for CT
☐ Res. Criteria
☐ GW Protection
☐ GA Mobility
☐ GB Mobility
☐ SW Protection
☐ Res. Vol.
☐ Ind. Vol.

Requirements for MA
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ MCP Certification
☐ Other

Comments, Special Requirements or Regulations:

Please see detection limits (MLs) listed next to each parameter above. Metals MLs are listed below:

Cd - 0.0005 mg/L; Pb - 0.0005 mg/L; Cu - 0.003 mg/L; Zn - 0.005 mg/L; Ni - 0.005 mg/L; Al - 0.02 mg/L

Please CC: Melanie.Cruff@gza.com and Robin.Faulk@gza.com on reports

Page 11 of 11

PHOENIX
Environmental Laboratories, Inc.

Wednesday, October 10, 2018

Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Project ID: PATRIOT BEVERAGES (MA)
Sample ID#s: CB64682 - CB64684

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 10, 2018

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		10/03/18	7:00
Location Code:	NEB	Received by:	CP	10/03/18	16:41
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22345				

Laboratory Data

SDG ID: GCB64682
Phoenix ID: CB64682

Project ID: PATRIOT BEVERAGES (MA)
Client ID: EFFLUENT-2 C38-3747

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ammonia as Nitrogen	< 0.10	0.10	mg/L	2	10/09/18	KDB	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director
October 10, 2018
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 10, 2018

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		10/03/18	7:30
Location Code:	NEB	Received by:	CP	10/03/18	16:41
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22345				

Laboratory Data

SDG ID: GCB64682
Phoenix ID: CB64683

Project ID: PATRIOT BEVERAGES (MA)
Client ID: RECEIVING WATER-2 C38-3748

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ammonia as Nitrogen	< 0.10	0.10	mg/L	2	10/09/18	KDB	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director
October 10, 2018
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 10, 2018

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	SURFACE WATER	Collected by:		10/03/18	7:00
Location Code:	NEB	Received by:	CP	10/03/18	16:41
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22345				

Laboratory Data

SDG ID: GCB64682
Phoenix ID: CB64684

Project ID: PATRIOT BEVERAGES (MA)
Client ID: EFFLUENT GRAB-2

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chlorine Residual	0.04	0.02	mg/L	1	10/03/18 19:24	O	SM4500CLG-97
pH	8.73	1.00	pH Units	1	10/04/18 06:42	RWR/KDB	SM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services.

Phyllis Shiller, Laboratory Director
October 10, 2018
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

October 10, 2018

QA/QC Data

SDG I.D.: GCB64682

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 450238 (mg/L), QC Sample No: CB63555 (CB64684)													
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	112							
QA/QC Batch 450342 (pH), QC Sample No: CB64648 (CB64684)													
pH			7.87	7.93	0.80	97.9						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 450815 (mg/L), QC Sample No: CB64685 (CB64682, CB64683)													
Ammonia as Nitrogen	BRL	0.05	<0.10	<0.10	NC	107			107			90 - 110	20

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
October 10, 2018

Wednesday, October 10, 2018

Criteria: None

State: MA

Sample Criteria Exceedances Report

GCB64682 - NEB

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac
NY # 11301

Analysis Comments

October 10, 2018 SDG I.D.: GCB64682

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

NCIP

CHAIN OF CUSTODY RECORD

Temp 2.1° Pg of

PHOENIX *Environmental Laboratories, Inc.*

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: service@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Data Delivery (check one):
☐ Fax #:
☒ Email: kimberly.wills@gza.com
Format: ☐ Excel ☐ Pdf ☐ Gis Key

Customer: New England Bioassay
Address: 77 Batson Drive
Manchester, CT 06042

Project: Patriot Beverages (MA)
Report to: Kim Wills
Invoice to: Kim Wills

Project P.O: 22345
Phone #: 860-643-9560
Fax #: 860-646-7169

Client Sample - Information - Identification

Sampler's Signature _____ Date _____

Matrix Code:
DW=drinking water WW=wastewater S=soil/solid O=other
GW=groundwater SL=sludge A=air

Analysis Request

Phoenix Sample #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	Ammonia (0.1 mg/L)	pH (–)	Total Residual Chlorine (0.02 mg/L)	Soil VOA Vials [ ] methanol [ ] Sod Bisulfate	GL Soil container ( ) oz	PL As is 250 ml	PL As is 120ml	GL Amber 250ml [ ] As is [ ] H2SO4	PL As is 1000ml	PL H2SO4 [X] 250ml [ ] 1000ml	PL HNO3 [ ] 250ml [ ] 1000ml	PL NaOH 250ml	Bacteria Bottle
646082	Effluent-2 C38-3747	WW	10/2/18-10/3/18	0700-0700	X								1				
646083	Receiving Water-2 C38-3748	O	10/3/18	0730	X								1				
646084	Effluent Grab - 2		10/3/18	0700		X	X					1					

Relinquished by:	Accepted by:	Date:	Time:
[signature]	[signature]	10-3-18	1550
[signature]	[signature]	10-3-18	1641

Comments, Special Requirements or Regulations:

Please see detection limits (MLs) listed next to each parameter above

Please CC: Melanie.Cruff@gza.com and Robin.Faulk@gza.com on reports

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☒ Standard
☐ Other

* Surcharge Applies

Requirements for CT
☐ Res. Criteria
☐ GW Protection
☐ GA Mobility
☐ GB Mobility
☐ SW Protection
☐ Res. Vol.
☐ Ind. Vol.

Requirements for MA
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ MCP Certification
☐ Other

PHOENIX
Environmental Laboratories, Inc.

Thursday, October 11, 2018

Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Project ID: PATRIOT BEVERAGES
Sample ID#s: CB66989 - CB66991

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 11, 2018

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		10/05/18	6:00
Location Code:	NEB	Received by:	SW	10/05/18	17:07
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22345				

Laboratory Data

SDG ID: GCB66989
Phoenix ID: CB66989

Project ID: PATRIOT BEVERAGES
Client ID: EFFLUENT-3

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	10/10/18	KDB	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director
October 11, 2018
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 11, 2018

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		10/05/18	6:30
Location Code:	NEB	Received by:	SW	10/05/18	17:07
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22345				

Laboratory Data

SDG ID: GCB66989
Phoenix ID: CB66990

Project ID: PATRIOT BEVERAGES
Client ID: RECEIVING WATER-3

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Ammonia as Nitrogen	0.12	0.05	mg/L	1	10/10/18	KDB	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller

Phyllis Shiller, Laboratory Director
October 11, 2018
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

October 11, 2018

FOR: Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Sample Information		Custody Information		Date	Time
Matrix:	WASTE WATER	Collected by:		10/05/18	6:00
Location Code:	NEB	Received by:	SW	10/05/18	17:07
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	22345				

Laboratory Data

SDG ID: GCB66989
Phoenix ID: CB66991

Project ID: PATRIOT BEVERAGES
Client ID: EFFLUENT GRAB-3

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Chlorine Residual	0.02	0.02	mg/L	1	10/05/18 20:41	O	SM4500CLG-97
pH	8.67	1.00	pH Units	1	10/06/18 02:18	RR/EG	SM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services.

Phyllis Shiller, Laboratory Director
October 11, 2018
Reviewed and Released by: Greg Lawrence, Assistant Lab Director

PHOENIX

Environmental Laboratories, Inc.
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Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

October 11, 2018

QA/QC Data

SDG I.D.: GCB66989

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 450689 (mg/L), QC Sample No: CB66012 (CB66991)													
Chlorine Residual	BRL	0.02	<0.01	<0.02	NC	107							
QA/QC Batch 450739 (pH), QC Sample No: CB66988 (CB66991)													
pH			7.64	7.64	0	98.2						85 - 115	20
Comment:													
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.													
QA/QC Batch 451101 (mg/L), QC Sample No: CB68030 (CB66989, CB66990)													
Ammonia as Nitrogen	BRL	0.05	<0.05	<0.05	NC	97.6			102			90 - 110	20

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
October 11, 2018

Thursday, October 11, 2018

Criteria: None

State: MA

Sample Criteria Exceedances Report

GCB66989 - NEB

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac
NY # 11301

Analysis Comments

October 11, 2018 SDG I.D.: GCB66989

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

PHOENIX Environmental Laboratories, Inc.

CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: service@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Temp 4.1 °C | Pg 1 of 1

Data Delivery (check one):
☐ Fax #:
☒ Email: kimberly.wills@gza.com
Format: ☐ Excel ☐ Pdf ☐ Gis Key

Customer: New England Bioassay
Address: 77 Batson Drive
Manchester, CT 06042

Project: Patriot Beverages (MA)
Report to: Kim Wills
Invoice to: Kim Wills

Project P.O: 22345
Phone #: 860-643-9560
Fax #: 860-646-7169

Client Sample - Information - Identification

Sampler's Signature _____ Date _____

Matrix Code:
DW=drinking water WW=wastewater S=soil/solid O=other
GW=groundwater SL=sludge A=air

Analysis Request

Phoenix Sample #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	Ammonia (0.1 mg/L)	pH (–)	Total Residual Chlorine (0.02 mg/L)	Soil VOA Vials [ ] methanol [ ] Sod Bisulfate	GL Soil container ( ) oz	PL As is 250 ml	PL As is 120ml	GL Amber 250ml [ ] As is [ ] H2SO4	PL As is 1000ml	PL H2SO4 [X] 250ml [ ] 1000ml	PL HNO3 [ ] 250ml [ ] 1000ml	PL NaOH 250ml	Bacteria Bottle
L069851	Effluent-3	WW	10/4-5/18	0700-0600	X								1				
L069890	Receiving Water-3	O	10/5/18	0630	X								1				
L069891	Effluent Grab - 3		10/5/18	0600		X	X			1							

Relinquished by:	Accepted by:	Date:	Time:
		10-5-18	1640
		10-5-18	17:07

Comments, Special Requirements or Regulations:

Please see detection limits (MLs) listed next to each parameter above

Please CC: Melanie.Cruff@gza.com and Robin.Faulk@gza.com on reports

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☒ Standard
☐ Other

* Surcharge Applies

Requirements for CT
☐ Res. Criteria
☐ GW Protection
☐ GA Mobility
☐ GB Mobility
☐ SW Protection
☐ Res. Vol.
☐ Ind. Vol.

Requirements for MA
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ MCP Certification
☐ Other

SAMPLE RECEIPT CHEMISTRY
&
CHAIN OF CUSTODY DOCUMENTS

NEW ENGLAND BIOASSAY - INITIAL CHEMISTRY DATA

PERMITTEE: Patriot Beverages

NEB JOB # 05.0044697.00

DATE RECEIVED	10/1/18		10/3/18		10/5/18	
SAMPLE TYPE:	EFF #1	BROOK #1	EFF #2	BROOK #2	EFF #3	BROOK #3
COC #	C38-3718	C38-3719	C38-3747	C38-3748	C38-3780	C38-3781
pH (SU)	8.6	7.6	8.5	7.5	8.5	7.4
Temperature (^{0}C)	4.3	9.6	3.0	3.5	2.9	2.2
Dissolved Oxygen (mg/L)	10.2	8.4	9.9	8.4	10.1	7.9
Conductivity (µmhos)	2,685	330	2,641	304	2,822	288
Salinity (ppt)	1	<1	1	<1	2	< 1
TRC - DPD (mg/L)	0.033	0.013	0.034	0.002	0.028	0.026
TRC - Amperometric (mg/L)	N/A	N/A	N/A	N/A	N/A	N/A
Hardness (mg/L as $CaCO_3$)	86	58	84	54	92	52
Alkalinity (mg/l as $CaCO_3$)	1,215	35	1,210	45	1,305	30
Tech Initials	PD	PD	TBP	TBP	CW	CW

NOTE: NA = NOT APPLICABLE

Data Reviewed By: _____ Date Reviewed: 11/1/18

NEW ENGLAND BIOASSAY - CHAIN-OF-CUSTODY

Sample Set #1

EFFLUENT

Sampler: Jim Drapeau

Title: Chief Operator WWTP

Facility: Patriot Beverages

Sampling Method: X **Composite**

Sample ID: Outfall 001

Start Date: 9/30/18 Time: 0800

End Date: 10/1/18 Time: 0700

Sampling Method: X **Grab** (for pH and TRC only X)

Date Collected: 10/1/18

Time Collected: 0700

Sample Type:

___ Prechlorinated

___ Dechlorinated

✓ Unchlorinated

___ Chlorinated

RECEIVING WATER

Sampler: Jim Drapeau

Title: Chief Operator WWTP

Facility: Patriot Beverages

Sampling Method: X Grab

Sample ID: Reedy Meadow Brook

Date Collected: 10/1/18

Time Collected: 0645

Received ON ICE

Effluent Sampling Location and Procedures:

Receiving Water Sampling Location and Procedures:

Requested Analysis: X Chronic and modified acute

Sample Shipment

Method of Shipment: NEB Courier

Relinquished By:		Date: 10/1/18	Time: 0817
Received By:		Date: 10/1/18	Time: 0817
RVR		10/1/18	0955
		10/1/18	0955

Optional Information

Purchase Order # to reference on invoice:

FOR NEB USE ONLY

*** Please return all ice packs NEB has provided to insure accurate temperature upon receipt to the NEB laboratory.**

Temperature of Effluent Upon Receipt at Lab: 4.3 °C

Temperature of Receiving Water Upon Receipt at Lab: 9.6 °C

Effluent COC# C38-3718

Receiving Water COC# C38-3719

IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO:
KIM WILLS, NEW ENGLAND BIOASSAY MANCHESTER, CT 06042

NEW ENGLAND BIOASSAY - CHAIN-OF-CUSTODY

Sample Set # 2

EFFLUENT

Sampler: Jim Dragon

Title: Chief Operator WWTP

Facility: Patriot Beverages

Sampling Method: X **Composite**

Sample ID: OUTFALL001

Start Date: 10/2/18 Time: 0700

End Date: 10/3/18 Time: 0700

Sampling Method: X **Grab** (for pH and TRC only X)

Date Collected: 10/3/18

Time Collected: 0700

Sample Type:

___ Prechlorinated
___ Dechlorinated
X Unchlorinated
___ Chlorinated

RECEIVING WATER

Sampler: Jim Dragon

Title: Chief Operator WWTP

Facility: Patriot Beverages

Sampling Method: X Grab

Sample ID: Reedy Meadow Brook

Date Collected: 10/3/18

Time Collected: 0730

Received ON ICE

Effluent Sampling Location and Procedures:

Receiving Water Sampling Location and Procedures:

Requested Analysis: X Chronic and modified acute

Sample Shipment

Method of Shipment: NEB Courier

Relinquished By: Jim Dragon Date: 10/3/18 Time: 8:25

Received By: Q. Lo Date: 10/3/18 Time: 8:25

10/3/18 9:56

Rec'd by: Joseph Beaudreau Optional Information 10/3/18 1009

Purchase Order # to reference on invoice:

FOR NEB USE ONLY

*** Please return all ice packs NEB has provided to insure accurate temperature upon receipt to the NEB laboratory.**

Temperature of Effluent Upon Receipt at Lab: 3.0 °C

Temperature of Receiving Water Upon Receipt at Lab: 3.5 °C

Effluent COC# C38-3747

Receiving Water COC# C38-3748

IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO:
KIM WILLS, NEW ENGLAND BIOASSAY MANCHESTER, CT 06042

NEW ENGLAND BIOASSAY - CHAIN-OF-CUSTODY

Sample Set #3

EFFLUENT

Sampler: Jim Deppasu
Title: Chief Greater WWTP
Facility: Patriot Beverages

Sampling Method: X **Composite**
Sample ID: OUTFALL 001
Start Date: 10/4/18 Time: 0700
End Date: 10/5/18 Time: 0600

Sampling Method: X **Grab** (for pH and TRC only X)
Date Collected: 10/5/18
Time Collected: 0600

Sample Type:
___ Prechlorinated
___ Dechlorinated
X Unchlorinated
___ Chlorinated

RECEIVING WATER

Sampler: Jim Deppasu
Title: Chief Greater WWTP
Facility: Patriot Beverages

Sampling Method: X Grab
Sample ID: Reedy Meadow Brook
Date Collected: 10/5/18
Time Collected: 0630

Effluent Sampling Location and Procedures:

Receiving Water Sampling Location and Procedures:

Requested Analysis: X Chronic and modified acute

Sample Shipment

Method of Shipment: NEB Courier

Relinquished By: [signature] Date: 10/5/18 Time: 8:05
Received By: [signature] Date: 10/5/18 Time: 8:05
Rel by: [signature] 10/5/18 10:37
Recd: [signature] 10/5/18 1037

Optional Information

Purchase Order # to reference on invoice:

Received
ON ICE

FOR NEB USE ONLY

*** Please return all ice packs NEB has provided to insure accurate temperature upon receipt to the NEB laboratory.**

Temperature of Effluent Upon Receipt at Lab: 2.9 °C
Temperature of Receiving Water Upon Receipt at Lab: 2.2 °C

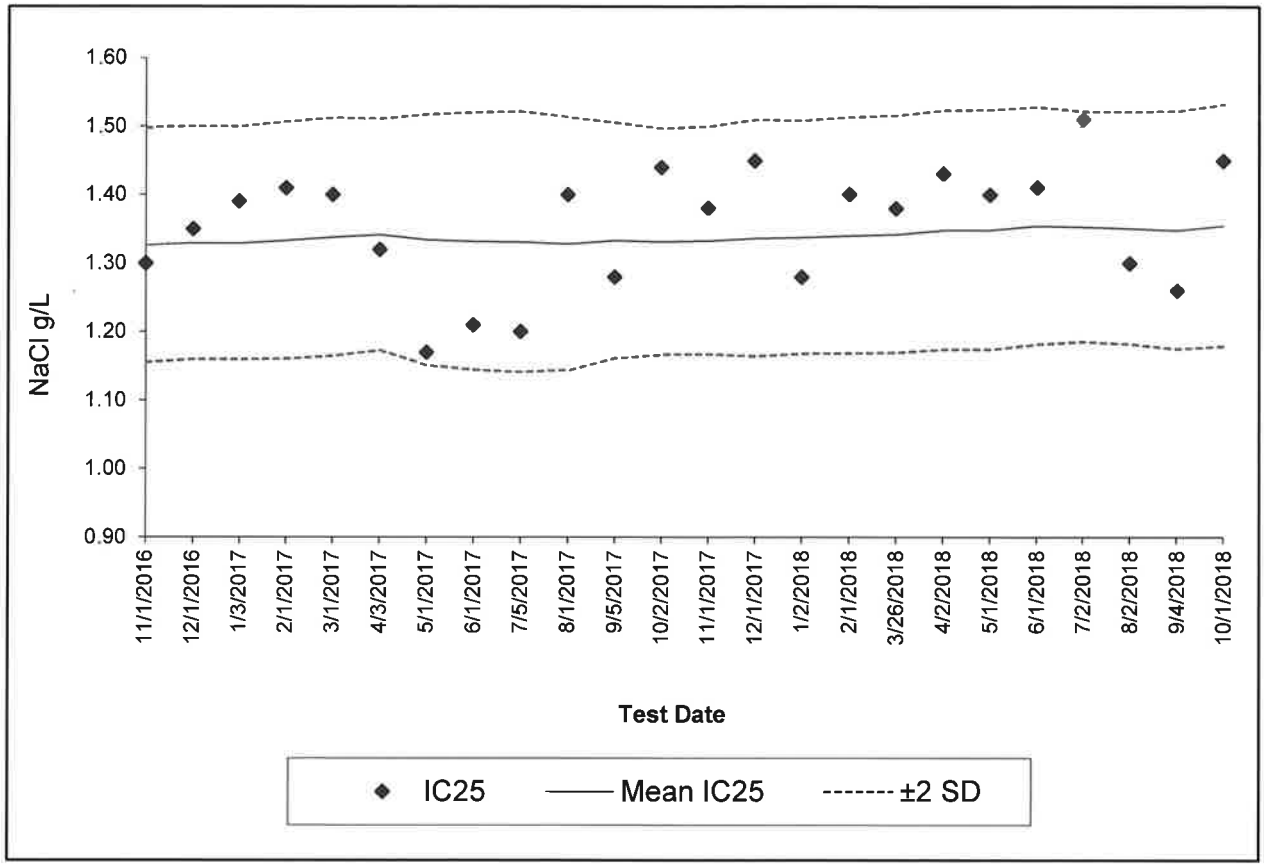
Effluent COC# C38-3780
Receiving Water COC# C38-3781

IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO:
KIM WILLS, NEW ENGLAND BIOASSAY MANCHESTER, CT 06042

REFERENCE TOXICANT CHARTS

New England Bioassay

Reference Toxicant Data: Sodium chloride (NaCl) *Pimephales promelas* 7-day Chronic Growth IC_{25}



Test ID	Date	IC_{25}	Mean IC_{25}	STD	-2STD	+2STD	Avg. CV	Growth PMSD (%)	Avg. PMSD (%)
16-1593	11/1/2016	1.30	1.33	0.09	1.16	1.50	0.06	6.87	9.68
16-1735	12/1/2016	1.35	1.33	0.09	1.16	1.50	0.06	7.89	9.51
17-15	1/3/2017	1.39	1.33	0.08	1.16	1.50	0.06	6.16	9.24
17-152	2/1/2017	1.41	1.33	0.09	1.16	1.51	0.06	9.65	9.27
17-268	3/1/2017	1.40	1.34	0.09	1.16	1.51	0.06	20.53	10.07
17-481	4/3/2017	1.32	1.34	0.08	1.17	1.51	0.06	7.47	9.90
17-617	5/1/2017	1.17	1.33	0.09	1.15	1.52	0.07	10.74	9.95
17-765	6/1/2017	1.21	1.33	0.09	1.14	1.52	0.07	7.41	9.80
17-973	7/5/2017	1.20	1.33	0.09	1.14	1.52	0.07	10.39	9.83
17-1147	8/1/2017	1.40	1.33	0.09	1.14	1.51	0.07	11.35	9.91
17-1318	9/5/2017	1.28	1.33	0.09	1.16	1.50	0.06	13.74	10.11
17-1522	10/2/2017	1.44	1.33	0.08	1.17	1.50	0.06	10.36	10.12
17-1696	11/1/2017	1.38	1.33	0.08	1.17	1.50	0.06	9.27	10.08
17-1809	12/1/2017	1.45	1.34	0.09	1.16	1.51	0.06	26.17	10.78
18-11	1/2/2018	1.28	1.34	0.09	1.17	1.51	0.06	6.16	10.59
18-184	2/1/2018	1.40	1.34	0.09	1.17	1.51	0.06	10.52	10.51
18-416	3/26/2018	1.38	1.34	0.09	1.17	1.51	0.06	9.14	10.49
18-472	4/2/2018	1.43	1.35	0.09	1.17	1.52	0.06	6.25	10.57
18-608	5/1/2018	1.40	1.35	0.09	1.17	1.52	0.06	11.80	10.88
18-745	6/1/2018	1.41	1.35	0.09	1.18	1.53	0.06	13.87	11.08
18-919	7/2/2018	1.51	1.35	0.08	1.19	1.52	0.06	12.86	10.83
18-1104	8/2/2018	1.30	1.35	0.08	1.18	1.52	0.06	9.21	10.63
18-1316	9/4/2018	1.26	1.35	0.09	1.18	1.52	0.06	11.89	10.84
18-1512	10/1/2018	1.45	1.36	0.09	1.18	1.53	0.06	8.61	10.76

National 75th Percentile and 90th Percentile CV Averages for Fathead Growth IC25 (EPA 833-R-00-003): 0.38 - 0.45
PMSD Upper and Lower Bounds for Fathead Growth (EPA-821-R-02-013): 12% - 30%